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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,722	02/09/2004	Rui Resendes	PO-8106/PS-1135	9537

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BAYER MATERIAL SCIENCE LLC
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EXAMINER

POULOS, SANDRA K

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/774,722

Applicant(s)

RESENDES ET AL.

Examiner

Sandra K. Poulos

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/9/04; 2/2/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Preparation of an admixture of a halobutyl elastomer with a mineral filler reacted with a compound having a basic nitrogen containing group and hydroxyl group, and optionally adding a silazane compound".

2. The abstract of the disclosure is objected to because of the line "compared to analogous compounds currently known in the art". Examiner suggests removing the line objected to, all other content is acceptable. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;

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- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

3. Claims 2-10 are objected to because of the following informalities: "A process according to Claim" should be "The process according to Claim".

Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Two double patenting rejections are set forth below.

Double Patenting, I

4. Claims 1, 5, and 8 rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 6,992,122. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the explanation below.

The claims of US 6,992,122 disclose a process for preparing compositions comprising metal free halobutyl elastomers and mineral fillers comprising the step of admixing at least one metal free halobutyl elastomer with at least one surface modified mineral filler, wherein the surface of said mineral filler has been modified with at least one organic compound containing at least one basic nitrogen-containing group and at least one hydroxyl group prior to admixing with the elastomer, wherein the organic compound is selected from the group consisting of proteins, aspartic acid, 6-aminocaproic acid, diethanolamine and triethanolamine. The difference between the claims is that the present claims include an optional silazane compound. However,

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since optional includes the instance where there is no silazane, the claims of US 6,992,122 would then therefore not be patentably distinct from the current cited claims.

Double Patenting, II

5. Claims 1 and 8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 7,015,265. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the explanation below.

The claims of US 7,015,265 disclose a process for preparing a filled halobutyl elastomer comprising admixing a halobutyl elastomer, particles of filler, at least one amino alcohol, and one or more hydrated metal halogens, and curing the resulting filled halobutyl elastomer but are silent with respect to possible mixing orders.

Applicant's attention is drawn to M.P.E.P. § 804 where it is disclosed that "the specification can always be used as a dictionary to learn the meaning of a term in a patent claim." *In re Boylan*, 392 F. 2d 1017, 157 USPQ 370 (CCPA 1968). Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. *In re Vogel*, 422 F. 2d 438, 164 USPQ 619, 622 (CCPA 1970).

The specification of US 7,015,265 discloses that "the order of the addition of the different components to the rubber is not critical, however, it might be advantageous to mix the metal halogen(s), the filler(s) and the organic compound which has at least one

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hydroxyl group and at least one basic nitrogen-containing group contains at least one hydroxyl group prior to the addition of the rubber" (col 6, lines 26-31). This process is the same as the currently claimed expect that the currently claimed has an optional silazane, however, since optional includes the instance where there is no silazane, the claims of US 7,015,265 would then therefore not be patentably distinct from the current cited claims.

Claims 1 and 8 are directed to an invention not patentably distinct from claims 1-11 of commonly assigned US 7,015,265. Specifically, although the conflicting claims are not identical, they are not patentably distinct for the reasons set forth in paragraph 5 above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned US 7,015,265, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being obvious over US 7,015,265.

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

For an explanation of the rejection, see paragraph 5 above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-10 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Resendes et al (US 7,015,265).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Resendes '265 discloses a process which includes mixing a halobutyl elastomer with a filler, such as a mineral filler, in the presence of an additive which is an organic compound which has at least one hydroxyl group and at least one basic nitrogen-containing group and one or more hydrated metal halogens (col 2, lines 14-21). Organic compounds are believed to disperse and bond the silica to the halogenated

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elastomers (col 2, lines 9-13). Brominated butyl rubber is preferred (col 3, lines 8-34).

The fillers include silica, silicates, clay, gypsum, alumina, titanium dioxide, talc, and mixtures (col 4, lines 40-50).

The organic compound which has at least one hydroxyl group and at least one basic nitrogen-containing group contains at least one hydroxyl group, may react with the mineral filler, and at least one group containing a basic nitrogen atom, which may react with the active halogen in a halogenated butyl elastomer (for example with the active bromine atom in a brominated butyl elastomer). Functional groups containing --OH may be, for example, alcohols or carboxylic acids (col 5, lines 15-43). Examples of organic compound which has at least one hydroxyl group and at least one basic nitrogen-containing group which give enhanced physical properties to mixtures of halobutyl elastomers and silica include proteins, aspartic acid, 6-aminocaproic acid, diethanolamine and triethanolamine. Preferably, the additive should contain a primary alcohol group and a primary amino group separated by methylene bridges, which may be branched (col 5, lines 15-43). In Examples 1-2, 2.2 phr of ethanolamine is used as the organic additive containing at least one amino group and at least one hydroxyl group. The enhanced interaction between the filler and halobutyl elastomer results in improved properties such a higher abrasion resistance (col 6, lines 32-42).

Resendes '265 discloses that the order of addition of the different components to the rubber is not critical, however, it might be advantageous to mix the metal halogen(s), the filler(s) and the organic compound which has at least one hydroxyl group and at least one basic nitrogen-containing group contains at least one hydroxyl

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group prior to the addition of the rubber (col 6, lines 26-31). This method of addition is the same as the currently claimed process.

It is to be noted that Resendes '265 does not disclose silazane compounds and thus still meets the current limitation of being optionally present.

Therefore, Resendes '265 anticipates the cited claims.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hopkins et al (US 2002/0156173).

Hopkins discloses a process which comprises mixing a halobutyl elastomer with a mineral filler in the presence of an additive which is an organic compound having at least one hydroxyl group and at least one basic nitrogen-containing group (para 6). Brominated butyl elastomer is preferred (para 15-18). The fillers include silica, silicates, clay, gypsum, alumina, titanium dioxide, talc, and mixtures (para 25).

The additive contains at least one hydroxyl group and at least one group containing a basic nitrogen atom. These groups possess the ability to react with the filler or with the active halogen in a halogenated butyl elastomer (for example with the active bromine atom in a brominated butyl elastomer). Functional groups containing --OH may be, for example, alcohols or carboxylic acids. Examples of additives that give enhanced physical properties to mixtures of halobutyl elastomers and filler include proteins, aspartic acid, 6-aminocaproic acid, diethanolamine and triethanolamine. Preferably, the additive should contain a primary alcohol group and a primary amino group separated by methylene bridges, which may be branched (para 28-30). The enhanced interaction between the filler and halobutyl elastomer results in improved properties such a higher abrasion resistance (para 34). It is to be noted that Hopkins does not disclose silazane compounds and thus still meets the current limitation of being optionally present.

Although it appears that all components are added to the mixture at once, it would have been obvious to mix the component in any order, such as the filler with the

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organic component to the halogenated butyl rubber, particularly because Hopkins discloses that the organic compound enhances interaction between the filler and rubber. Case law holds that the selection of any order of mixing ingredients is *prima facie* obvious. *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930).

9. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Resendes (US 6,706,804).

Resendes '804 discloses a process which includes mixing a halobutyl elastomer with at least one mineral filler, in the presence of at least one silazane compound and one additive containing at least one hydroxyl group and a functional group containing a basic amine. (col 2, lines 10-17). Brominated butyl elastomer is preferred (col 3 line 50 to col 4 line 16). The fillers include silica, silicates, clay, gypsum, alumina, titanium dioxide, talc, and mixtures (col 5, lines 29-59).

The additive contains at least one hydroxyl group and at least one group containing a basic nitrogen atom. Examples of these additives, which give enhanced physical properties to mixtures of halobutyl elastomers, filler and organic silazanes, include proteins, aspartic acid, 6-aminocaproic acid, diethanolamine and triethanolamine. Preferably, the additive containing at least one hydroxyl group and a functional group containing a basic amine should also contain a primary alcohol group and an amine group separated by methylene bridges, which may be branched (col 6, lines 45-59). The enhanced interaction between the filler and halobutyl elastomer results in improved properties such a higher abrasion resistance (col 7, lines 31-35).

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The silazane compound can have one or more silazane group, such as a disilazane. Organic silazane compounds are preferred (col 6, lines 36-44). The amount of silazane compound is typically in the range of from 0.5 to 10 phr (col 6, lines 64-66).

Although it appears that all components are added to the mixture at once, it would have been obvious to mix the component in any order, such as the filler with the organic component to the halogenated butyl rubber, particularly because Hopkins discloses that the organic compound enhances interaction between the filler and rubber. Case law holds that the selection of any order of mixing ingredients is *prima facie* obvious. *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra K. Poulos whose telephone number is (571) 272-6428. The examiner can normally be reached on M-F 7:30-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SKP

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